CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.07/KRIDL/CEMENT/2014-15

Date: 28.06.2014

TEST REPORT

CLIENT	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
AGENCY	:	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	:	Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.
REFERENCE	:	AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014
SAMPLE ID	:	Cement
SAMPLES SUPPLIED BY	:	AGENCY

The results of the tests conducted on the cement sample are as follows:

Sl.No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-1989
1	a) Initial Setting Time	IS-4031 (Part -5)	150 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5)	495 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part 3) by the Le-Chatelier method	1 mm	Not more than 10 mm
3	Standard Consistency	IS-4031 (Part -4)	25.50 %	-

Note:

⇒ The report shall not be reproduced, except in full, without the written approval of the laboratory.

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒ Any Query regarding the report must be reported within 15 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.
Bangalore.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.07/KRIDL/SAND/2014-15 : 28.06.2014

TEST REPORT ON FINE AGGREGATES (SAND)
IS 383-1970 (RA- 2002)

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014

Date of Testing : 28.06.2014

Material : Sand Total Wt. of Aggregates in gms **2000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits For Zone-II
10	0	0	0	100	100
4.75	95	4.75	4.75	95.3	90-100
2.36	227	11.35	16.10	83.9	75-100
1.18	493	24.65	40.75	59.3	55-90
600 Micron	405	20.25	61.00	39.0	35-59
300 Micron	512	25.60	86.60	13.4	8-30
150 Micron	207	10.35	96.95	3.1	0-10

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 15 days from the date of testing

Assistant Engineer
Kodigehalli Division,
Yelahanka, B.B.M.P.
Bangalore.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.07/KRIDL/AGG/2014-15 : 28.06.2014

TEST REPORT ON COARSE AGGREGATES
IS 383-1970 (RA- 2002)

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014

Date of Testing : 28.06.2014

Material : 40mm Aggregates

Total Wt. of Aggregates in gms **25000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits
80	0	0	0	100	100
40	885	3.54	3.54	96.46	95-100
20	15260	61.04	64.58	35.42	30-70
10	5945	23.78	88.36	11.64	10-35
4.75	2420	9.68	98.04	1.96	0-5

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 15 days from the date of testing

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P
Bangalore.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.07/KRIDL/STEEL/2014-15 28.06.2014

TEST REPORT ON REINFORCEMENT STEEL

Client	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	:	**Technical Manager (West)**, KRIDL, Bangalore.
Name of the work	:	Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.
Reference	:	AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014
Date of Test	:	28.06.2014
Technical Reference	:	IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm²	Tensile strength (Ultimate stress) N/mm²	Elongation percent gauge length		
1	10	0.62	513	553	13.15	O.K	O.K

Note:

⇒ The report shall not be reproduced, except in full, without the written approval of the laboratory.

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒ Any Query regarding the report must be reported With in 15 days from the date of testing.

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.07/KRIDL/STEEL/2014-15 28.06.2014

TEST REPORT ON REINFORCEMENT STEEL

Client	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	:	**Technical Manager (West),** KRIDL, Bangalore.
Name of the work	:	Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.
Reference	:	AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014
Date of Test	:	28.06.2014
Technical Reference	:	IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm²	Tensile strength (Ultimate stress) N/mm²	Elongation percent gauge length		
1	12	0.89	515	557	13.40	O.K	O.K

Note:

⇒ The report shall not be reproduced, except in full, without the written approval of the laboratory.

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒ Any Query regarding the report must be reported Within 15 days from the date of testing..

Assistant Executive Engr
Kodigehalli Sub Divisn
Yelahanka Zone, B.B.M.P
Bangalore.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.07/KRIDL/CUBE/2014-15

28.07.2014

TEST REPORT ON CONCRETE CUBES

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of the work : Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{20}

Compressive Strength as on : 28^{th} day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	30.06.2014	28.07.2014	8.395	492.6	21.89
2	30.06.2014	28.07.2014	8.476	507.2	22.54
3	30.06.2014	28.07.2014	8.527	526.7	23.41

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 15 days from the date of testing.

Civil-Tech Consultants & Engineers Bangalore

Assistant Executive Engineer
Kodigehalli Sub Divn.
Yelahanka Zone, B.B.
Bangalore.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.07/KRIDL/WMM/Gradation/2014-15

10.07.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014

Date of Testing : 10.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **25500**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	985	985	3.9	96.1	95-100
22.4	6180	7165	28.1	71.9	60-80
11.2	5475	12640	49.6	50.4	40-60
4.75	4360	17000	66.7	33.3	25-40
2.36	3725	20725	81.3	18.7	15-30
0.600	2150	22875	89.7	10.3	8-22
0.075	2340	25215	98.9	1.1	0-8

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 15 days from the date of testing.

Civil-Tech Consultants & Engineers Bangalore

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.07/KRIDL/WMM/AIV/2014-15 10.07.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, Bangalore.
Name of the Work	Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.
Reference	AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	10.07.2014

Sl No.	Details	Trial No.			Average
		1	2	3	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	392	387	384	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	89	85	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	307	298	299	
4	Aggregate Impact value = percent fines	21.68	23.00	22.14	
	100* (W_2/W_1)%				22.27

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

Note:

→ This test report should not be reproduced except in full, without written approval of the laboratory

→ The results indicated above are based on the tests carried out on the samples received in the laboratory

→ Any Query regarding the report must be reported within 15 days from the date of testing.

Civil-Tech Consultants & Engineers Bangalore

Assistant Executive Engineer
Kodigehalli Sub Division
Yelahanka, B.B.M.P.,
Bangalore.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.07/KRIDL/WMM/S-T/2014-15 10.07.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, Bangalore.
Name of Work	Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.
Reference	AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	10.07.2014

Result : Flakiness Index = **11.85%**

Elongation Index = **13.76%**

Result : Combined Flakiness & Elongation index 25.61%

Note:

→ This test report should not be reproduced except in full, without written approval of the laboratory

→ The results indicated above are based on the tests carried out on the samples received in the laboratory

→ Any Query regarding the report must be reported within 15 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.07/KRIDL/WMM/AL/2014-15 10.07.2014

ATTERBERG LIMITS TEST FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014

Date of Testing : 10.07.2014

Material : WMM

Sample Location : WMM Mix Plant

As per MORTH Table 400-11

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	22.35	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 15 days from the date of testing.

Civil-Tech Consultants & Engineers Bangalore

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.
Bangalore

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.07/KRIDL/SDBC/Bit/2014-15 23.07.2014

BITUMEN CONTENT DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

AASHTO T 164

CLIENT	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.
REFERENCE	AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014
SAMPLE I/D	Roads in Munigurappa layout Ward No.07 BBMP, Bangalore.
DATE OF TESTING	23.07.2014

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	475.5	476.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	24.5	23.50
7. Bitumen content in %	4.90	4.70
8. Average	**4.80**	

Note:

Þ This test report should not be reproduced except in full, without written approval of the laboratory

Þ The results indicated above are based on the tests carried out on the samples received in the laboratory

Þ Any Query regarding the report must be reported within 15 days from the date of testing.

Civil-Tech Consultants & Engineers Bangalore

Assistant Executive Engineer
Kodigehalli Sub Division
Yelahanka Zone, B.B.M.P.
Bangalore.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.07/KRIDL/SDBC/Bit/2014-15 23.07.2014

BITUMEN CONTENT AFTER GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

AASHTO T 30

CLIENT	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements of Roads in Munigurappa Layout in Ward No.07 Byatarayanapura, Kodigehalli Sub Division, BBMP, Bangalore.
REFERENCE	AEE/(KOD.SUB.DIV)/67/A/2014-15 Dated: 26.06.2014
SAMPLE I/D	Roads in Munigurappa layout Ward No.07 BBMP, Bangalore.
DATE OF TESTING	23.07.2014

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-4 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	37.42	7.87	7.87	92.13	90-100
4.75	262.9	55.29	63.16	36.84	35-51
2.36	55.43	11.66	74.82	25.18	24-39
1.18	42.69	8.98	83.79	16.21	15-30
0.3	25.92	5.45	89.25	10.75	9-19
0.075	27.58	5.80	95.05	4.95	3-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-4 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	38.63	8.11	8.11	91.89	90-100
4.75	262.8	55.15	63.26	36.74	35-51
2.36	56.34	11.82	75.08	24.92	24-39
1.18	44.87	9.42	84.50	15.50	15-30
0.3	23.59	4.95	89.45	10.55	9-19
0.075	28.43	5.97	95.42	4.58	3-8

Note:

- This test report should not be reproduced except in full, without written approval of the laboratory
- The results indicated above are based on the tests carried out on the samples received in the laboratory
- Any Query regarding the report must be reported within 15 days from the date of testing.

Assistant Executive Engineer
Kodige[illegible] Sub Division.
Yelaha[illegible], B.B.M.P.,
[illegible]ore.

M/s. Civil-Tech Consultants & Engineers
23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com